

(Model.)

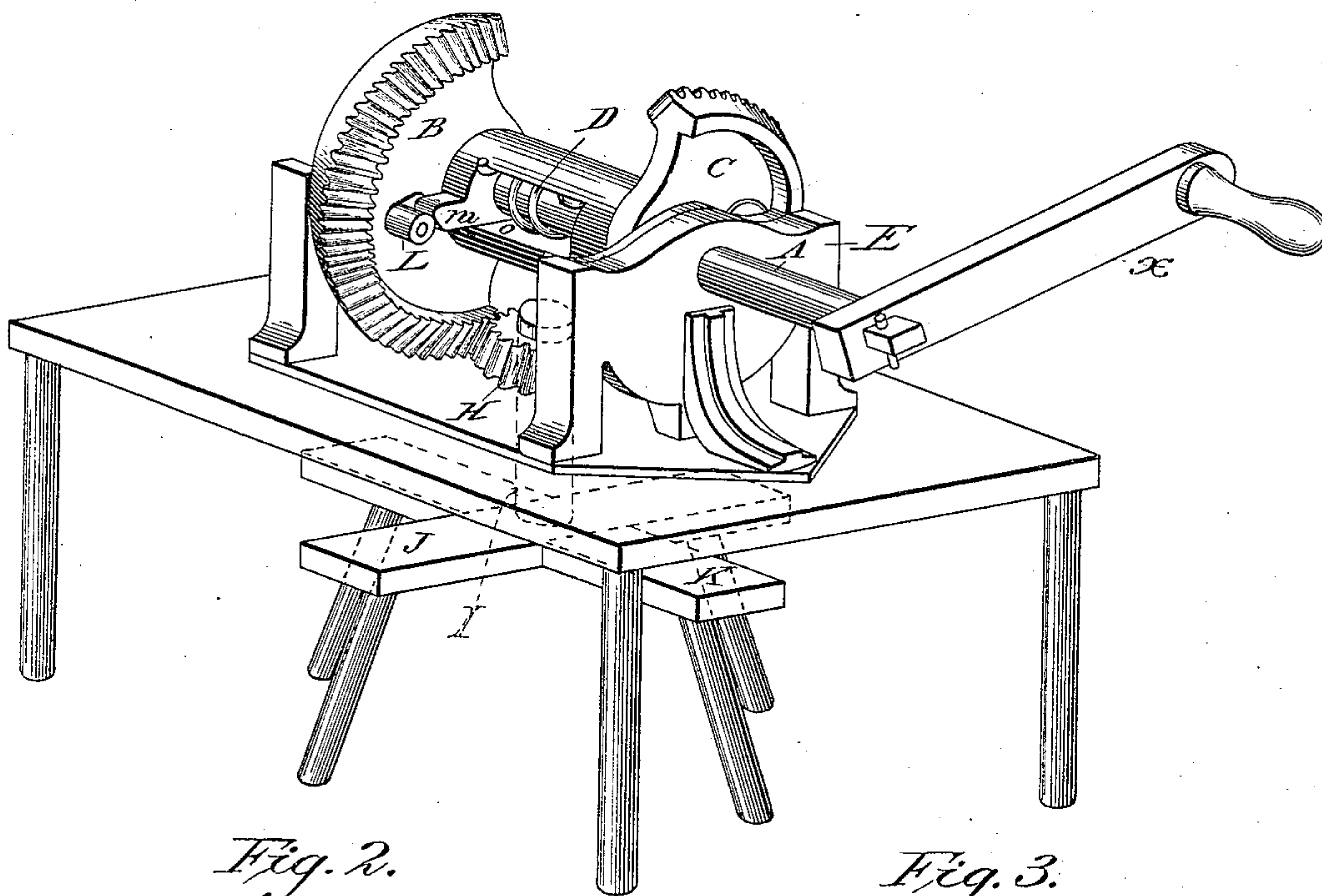
G. M. WALKER.

GEARING FOR WASHING MACHINES, CHURNS, &c.

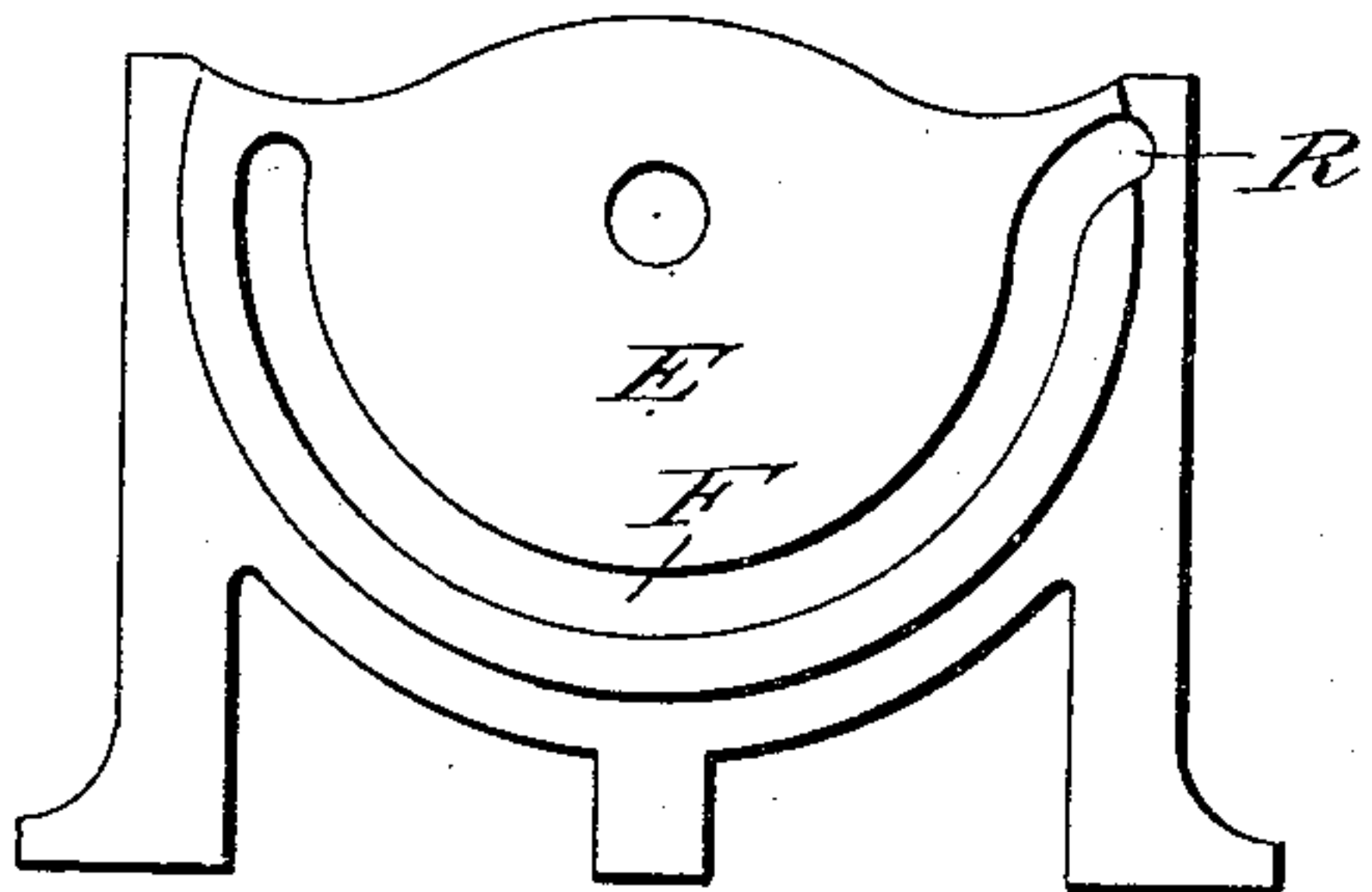
No. 451,091.

Patented Apr. 28, 1891.

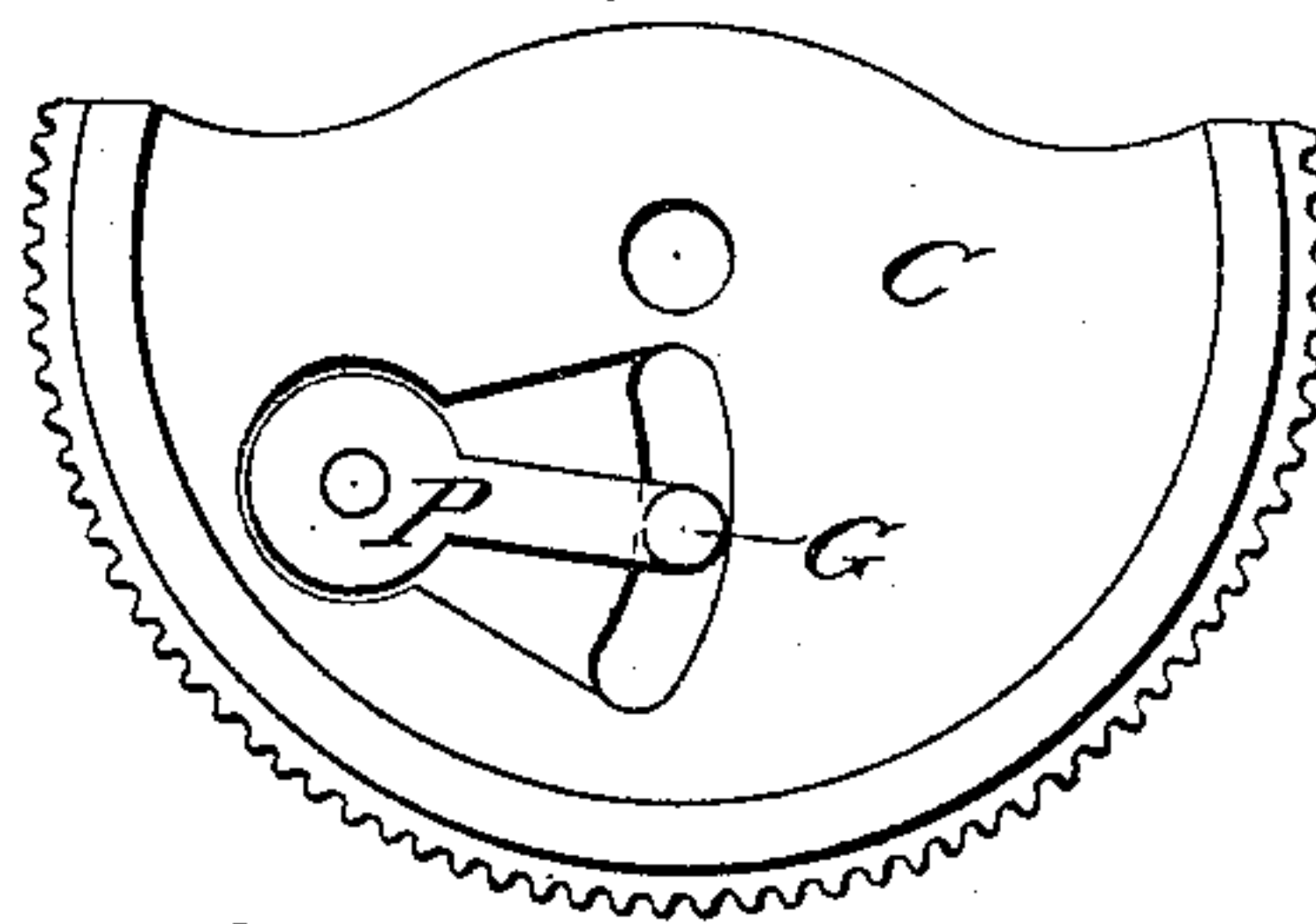
*Fig. 1.*



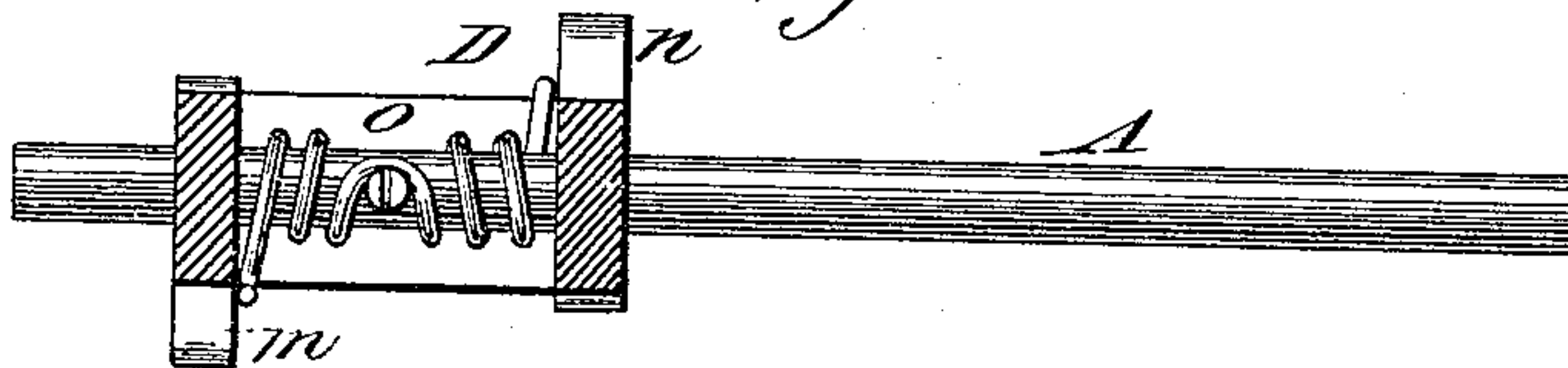
*Fig. 2.*



*Fig. 3.*



*Fig. 4.*



Witnesses:

Robt W Barrow

J. A. Hanson

Inventor:

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# UNITED STATES PATENT OFFICE.

GABRIEL MARIAN WALKER, OF MACON CITY, MISSOURI.

## GEARING FOR WASHING-MACHINES, CHURNS, &c.

SPECIFICATION forming part of Letters Patent No. 451,091, dated April 28, 1891.

Application filed October 3, 1890. Serial No. 367,013. (Model.)

*To all whom it may concern:*

Be it known that I, GABRIEL MARIAN WALKER, a citizen of the United States, residing in Macon City, in the county of Macon, State of Missouri, have invented a new and useful Gearing for Washing-Machines, Churns, &c., of which the following is a specification.

My invention relates to improvements in the gearing for operating washing-machines and the like in which the continuous rotary motion of the driving-shaft in one direction is converted into intermittent rotary motion in opposite directions of the agitator or other device operated; and it consists in the mechanism hereinafter described, and illustrated in the accompanying drawings, in which—

Figure 1 represents a view of the entire machine. Fig. 2 represents the form of the slot in each of the two standards or side pieces that inclose the machine. Fig. 3 represents one of the segment-gears with the pivoted arm attached. Fig. 4 represents the central boxing, which is attached to the main axle by means of a spring.

Similar letters relate to similar parts in all the figures.

In Fig. 1, I J K is the agitator, which rotates in the tub. The rod I extends up through the table and is fixed in the center of the pinion H. It is continuously in gear with both B and C at all times. The segment-gears B and C are not fixed to the axle A, but are free to rotate about it. The boxing D is attached to the axle A by means of the spring O and partakes at all times of the forward motion of the axle A, which is worked by the crank X.

From the boxing D extend at opposite corners two shoulders *m* and *n*. As the boxing rotates, these shoulders catch alternately on the opposite rollers G and L, which are attached, respectively, to the segment-gears B and C, and thus the motion of D is communicated alternately to B and C, to each one-half the time. Thus alternate motion is communicated to H and the agitator. Suppose the machine to be started from the position shown in Fig. 1. The crank X being turned to the right, the shoulder *m* will not catch the roller L, which operates the segment-gear B, because L is farther from the axle than the length of the shoulder *m*; but the shoulder *n*

catches the farther end of the roller G, which operates the segment-gear C and brings the roller, and consequently the segment-gear C, around with the motion of the axle, the roller G following the slot F. At the point R this slot diverges farther from the axle than the length of the shoulder *n*. The roller G follows the slot in its outward divergence and the shoulder *n* slips off the roller G and moves on, the segment-gear C being thus detached from the axle A. During this half-revolution the segment-gear B has been moved backward by its connection with the pinion H to a position just opposite to its position as shown in the drawings. Then the shoulder *m* in its forward motion catches the roller L and communicates the motion of the axle to the segment-gear B. The roller L is brought around along a slot in the opposite piece exactly like the slot F until the roller *u* reaches a point corresponding to point R, when the shoulder slips off the roller and passes by, as in the first case.

The mechanism is so adjusted that while either segment-gear is being moved forward by the motion from the axle A, communicated through the boxing D, the other segment-gear is being moved back by its connection with the pinion H on the opposite side. Thus for each revolution of the crank we obtain a double rotation of the agitator, one forward and one back.

Fig. 2 represents one of the two similar standards which are fastened at their feet to the table, which inclose the gearing on opposite sides, and through which the axle A passes. The slot F in these standards is a semicircle up to the point R, where the slot diverges farther from the axle. The radius of this circular slot is shorter than the shoulder *m*; but the end of the slot, after it diverges farther from the center, is farther from the center than the length of the shoulders *m* and *n*. Consequently the shoulders *m* and *n* in rotating with the axle catch the rollers working in these slots and bring these rollers around with them until the slot diverges from the center, when the rollers pass beyond the reach of the shoulders, which pass on in their rotation.

Fig. 3 represents a back of one of the segment-gears with the pivoted arm P attached.

On each side of the pivoted arm is a roller, one of which is caught by the shoulder and the other works in the slot. This pivoted arm is so attached to the segment-gear as to  
5 allow it to move up and down in the direction of the radius of the segment-gear, thus allowing the roller to follow the shape of the slot F.

Fig. 4 represents the axle A with the boxing D attached. This boxing D at all times  
10 moves forward with the axle A.

What I do claim as my invention is—

A device for operating washing-machines, churns, and the like, consisting of the driving-shaft, the boxing yieldingly mounted on  
15 said shaft and having the shoulders *m* and *n*

oppositely disposed thereon, the segment-gears loosely mounted on said shaft, one at each end of said boxing, an arm P, pivoted on each of said segment-gears, each of said  
20 arms having a projection thereon extending through a slot in its gear and alternately engaging and releasing the shoulders on the boxing, whereby one of said segment-gears is  
25 caused to rock with the shaft, while the other is loose, and a gear meshing with both segment-gears, substantially as described.

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Witnesses:

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